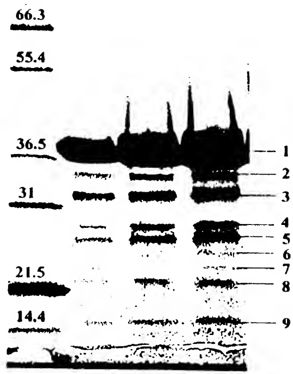


FIG. 1

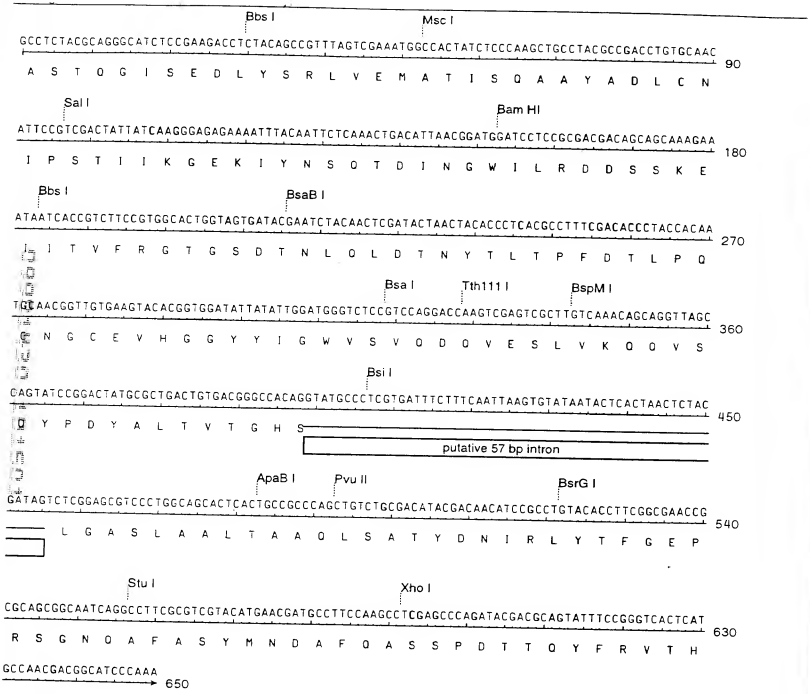

Bbs I
Msc I
GCCTCTACGCAGGGCATCTCCGAAGACCTCTACAGCCGTTTAGTCGAAATGGCCACTATCTCCCAAGCTGCCTACGCCGACCTGTGCAAC
90
A S T Q G I S E D L Y S R L V E M A T I S Q A A Y A D L C N
Sal I
Bam HI
ATTCCGTCGACTATTATCAAGGGAGAGAAAATTTACAATTCTCAAACTGACATTAACGGATGGATCCTCCGCGACGACAGCAGCAAAGAA
180
I P S T I I K G E K I Y N S Q T D I N G W I L R D D S S K E
Bbs I
BsaB I
ATAATCACCGTCTTCCGTGGCACTGGTAGTGATACGAATCTACAACTCGATACTAACTACACCCTCACGCCTTTCGACACCCTACCACAA
270
I I T V F R G T G S D T N L Q L D T N Y T L T P F D T L P Q
Bsa I
Tth111 I
BspM I
TGCAACGGTTGTGAAGTACACGGTGGATATTATATTGGATGGGTCTCCGTCCAGGACCAAGTCGAGTCGCTTGTCAAACAGCAGGTTAGC
360
C N G C E V H G G Y Y I G W V S V Q D Q V E S L V K Q Q V S
Bsi I
CAGTATCCGGACTATGCGCTGACTGTGACGGGCCACAGGTATGCCCTCGTGATTTCTTTCAATTAAGTGTATAATACTCACTAACTCTAC
450
Q Y P D Y A L T V T G H S
putative 57 bp intron
ApaB I
Pvu II
BsrG I
GATAGTCTCGGAGCGTCCCTGGCAGCACTCACTGCCGCCCAGCTGTCTGCGACATACGACAACATCCGCCTGTACACCTTCGGCGAACCG
540
L G A S L A A L T A A Q L S A T Y D N I R L Y T F G E P
Stu I
Xho I
CGCAGCGGCAATCAGGCCTTCGGGTCGTACATGAACGATGCCTTCCAAGCCTCGAGCCCAGATACGACGCAGTATTTCCGGGTCACTCAT
630
R S G N Q A F A S Y M N D A F Q A S S P D T T Q Y F R V T H
GCCAACGACGGCATCCCAAA
650
A N D G I P

FIG. 2

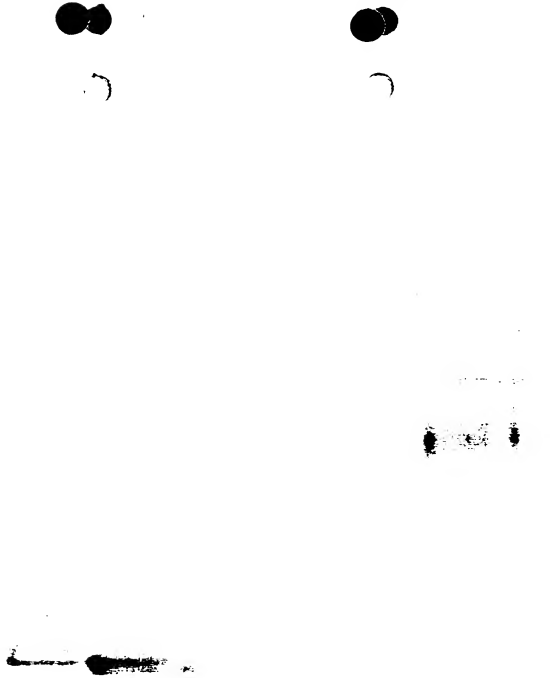
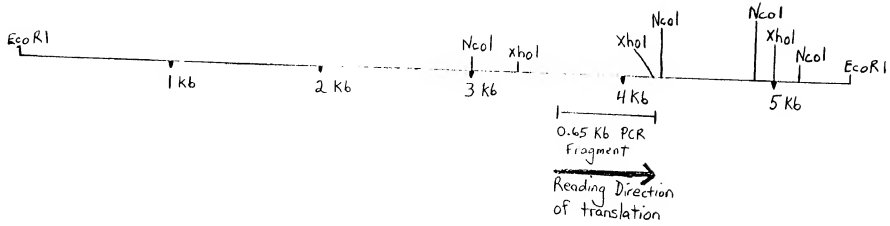


FIG. 3



5.5 Kb EcoR1 Fragment cloned into pLITMUS 28 E.coli plasmid

FIG. 4

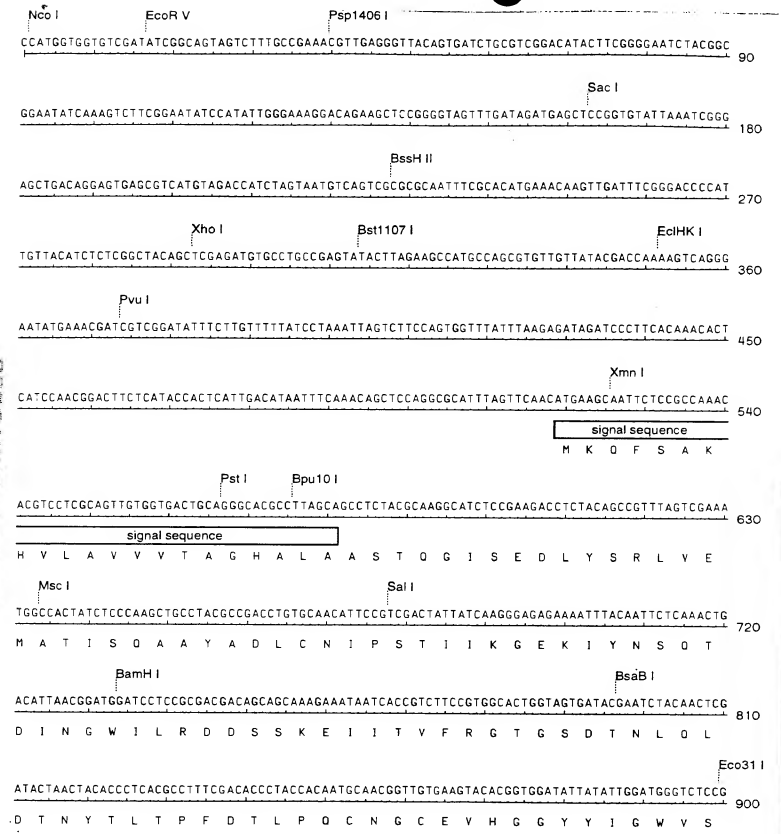

Nco I
EcoR V
Psp1406 I
90
Sac I
180
BssH II
270
Xho I
Bst1107 I
EclHK I
360
Pvu I
450
Xmn I
540
signal sequence
M K Q F S A K
Pst I
Bpu10 I
630
signal sequence
H V L A V V V T A G H A L A A S T Q G I S E D L Y S R L V E
Msc I
Sal I
720
M A T I S Q A A Y A D L C N I P S T I I K G E K I Y N S Q T
BamH I
BsaB I
810
D I N G W I L R D D S S K E I I T V F R G T G S D T N L Q L
Eco31 I
900
D T N Y T L T P F D T L P Q C N G C E V H G G Y Y I G W V S

Fig. 5A

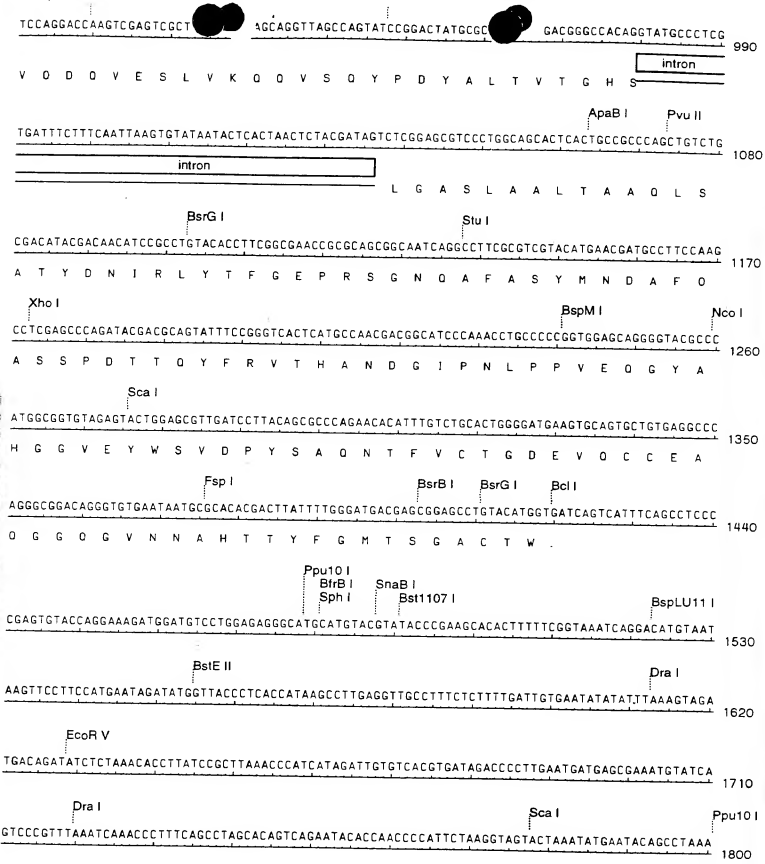

990
intron
ApaB I
Pvu II
1080
intron
BsrG I
Stu I
1170
Xho I
BspM I
Nco I
1260
Sca I
1350
Fsp I
BsrB I
BsrG I
Bcl I
1440
Ppu10 I
BfrB I
Sph I
SnaB I
Bst1107 I
BspLU11 I
1530
BstE II
Dra I
1620
EcoR V
1710
Dra I
Sca I
Ppu10 I
1800

Fig 5B

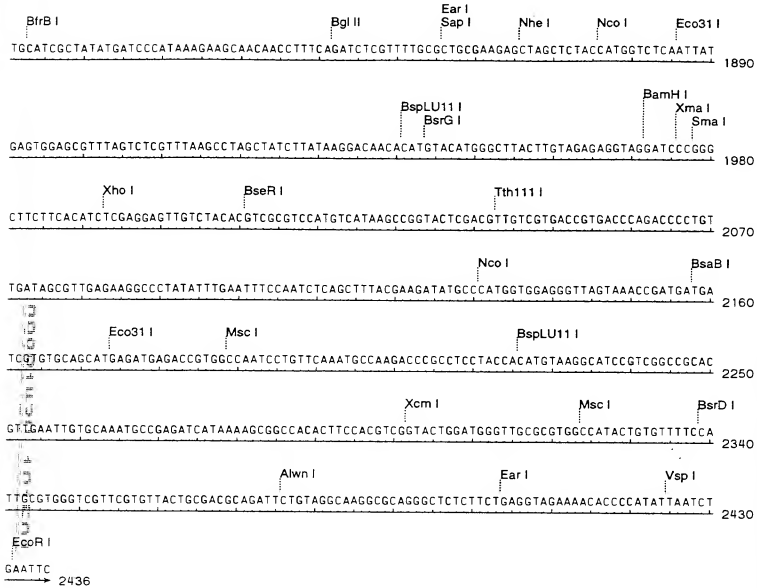

BfrB I
Bgl II
Ear I
Sap I
Nhe I
Nco I
Eco31 I
TGCATCGCTATATGATCCCATAAAGAAGCAACAACCTTTCAGATCTCGTTTTGCGCTGCGAAGAGCTAGCTCTACCATGGTCTCAATTAT
1890
BamH I
Xma I
Sma I
BspLU11 I
BsrG I
GAGTGGAGCGTTTAGTCTCGTTTAAGCCTAGCTATCTTATAAGGACAACACATGTACATGGGCTTACTTGTAGAGAGGTAGGATCCCGGG
1980
Xho I
BseR I
Tth111 I
CTTCTTCACATCTCGAGGAGTTGTCTACACGTCGCGTCCATGTCATAAGCCGGTACTCGACGTTGTCGTGACCGTGACCCAGACCCCTGT
2070
Nco I
BsaB I
TGATAGCGTTGAGAAGGCCCTATATTTGAATTTCCAATCTCAGCTTTACGAAGATATGCCCATGGTGGAGGGTTAGTAAACCGATGATGA
2160
Eco31 I
Msc I
BspLU11 I
TCGTGTGCAGCATGAGATGAGACCGTGGCCAATCCTGTTCAAATGCCAAGACCCGCCTCCTACCACATGTAAGGCATCCGTCGGCCGCAC
2250
Xcm I
Msc I
BsrD I
GTTGAATTGTGCAAATGCCGAGATCATAAAAGCGGCCACACTTCCACGTCGGTACTGGATGGGTTGCGCGTGGCCATACTGTGTTTTCCA
2340
Alwn I
Ear I
Vsp I
TTCCGTGGGTCGTTCGTGTTACTGCGACGCAGATTCTGTAGGCAAGGCGCAGGGCTCTCTTCTGAGGTAGAAAACACCCCATATTAATCT
2430
EcoR I
GAATTC
2436

Fig. 5C

Figure 6 (SEQ.ID NO:29)

CCATGGTGGTGTCGATATCGGCAGTAGTCTTTGCCGAAACGTTGAGGGTTACAGTGATCTGCGTCGGACATACTT
CGGGGAATCTACGGCGGAATATCAAAGTCTTCGGAATATCCATATTGGGAAAGGACAGAAGCTCCGGGGTAGTTT
GATAGATGAGCTCCGGTGTATTAAATCGGGAGCTGACAGGAGTGAGCGTCATGTAGACCATCTAGTAATGTCAGT
CGCGCGCAATTTCGCACATGAAACAAGTTGATTTCGGGACCCCATTGTTACATCTCTCGGCTACAGCTCGAGATG
TGCCTGCCGAGTATACTTAGAAGCCATGCCAGCGTGTTGTTATACGACCAAAAGTCAGGGAATATGAAACGATCG
TCGGATATTTCTTGTTTTTATCCTAAATTAGTCTTCCAGTGGTTTATTTAAGAGATAGATCCCTTCACAAACACT
CATCCAACGGACTTCTCATACCACTCATTGACATAATTTCAAACAGCTCCAGGCGCATTTAGTTCAACATGAAGC
AATTCTCCGCCAAACACGTCCTCGCAGTTGTGGTGACTGCAGGGCACGCCTTAGCAGCCTCTACGCAAGGCATCT
CCGAAGACCTCTACAGCCGTTTAGTCGAAATGGCCACTATCTCCCAAGCTGCCTACGCCGACCTGTGCAACATTC
CGTCGACTATTATCAAGGGAGAGAAAATTTACAATTCTCAAACTGACATTAACGGATGGATCCTCCGCGACGACA
GCAGCAAAGAAATAATCACCGTCTTCCGTGGCACTGGTAGTGATACGAATCTACAACTCGATACTAACTACACCC
TCACGCCTTTCGACACCCTACCACAATGCAACGGTTGTGAAGTACACGGTGGATATTATATTGGATGGGTCTCCG
TCCAGGACCAAGTCGAGTCGCTTGTCAAACAGCAGGTTAGCCAGTATCCGGACTATGCGCTGACTGTGACGGGCC
ACAGGTATGCCCTCGTGATTTCTTTCAATTAAGTGTATAATACTCACTAACTCTACGATAGTCTCGGAGCGTCCC
TGGCAGCACTCACTGCCGCCCAGCTGTCTGCGACATACGACAACATCCGCCTGTACACCTTCGGCGAACCGCGCA
GCGGCAATCAGGCCTTCGCGTCGTACATGAACGATGCCTTCCAAGCCTCGAGCCCAGATACGACGCAGTATTTCC
GGGTCACTCATGCCAACGACGGCATCCCAAACCTGCCCCCGGTGGAGCAGGGGTACGCCCATGGCGGTGTAGAGT
ACTGGAGCGTTGATCCTTACAGCGCCCAGAACACATTTGTCTGCACTGGGGATGAAGTGCAGTGCTGTGAGGCCC
AGGGCGGACAGGGTGTGAATAATGCGCACACGACTTATTTTGGGATGACGAGCGGAGCCTGTACATGGTGATCAG
TCATTTCAGCCTCCCCGAGTGTACCAGGAAAGATGGATGTCCTGGAGAGGGCATGCATGTACGTATACCCGAAGC
ACACTTTTTCGGTAAATCAGGACATGTAATAAGTTCCTTCCATGAATAGATATGGTTACCCTCACCATAAGCCTT
GAGGTTGCCTTTCTCTTTTGATTGTGAATATATATTTAAAGTAGATGACAGATATCTCTAAACACCTTATCCGCT
TAAACCCATCATAGATTGTGTCACGTGATAGACCCCTTGAATGATGAGCGAAATGTATCAGTCCCGTTTAAATCA
AACCCTTTCAGCCTAGCACAGTCAGAATACACCAACCCCATTCTAAGGTAGTACTAAATATGAATACAGCCTAAA
TGCATCGCTATATGATCCCATAAAGAAGCAACAACCTTTCAGATCTCGTTTTGCGCTGCGAAGAGCTAGCTCTAC
CATGGTCTCAATTATGAGTGGAGCGTTTAGTCTCGTTTAAGCCTAGCTATCTTATAAGGACAACACATGTACATG
GGCTTACTTGTAGAGAGGTAGGATCCCGGGCTTCTTCACATCTCGAGGAGTTGTCTACACGTCGCGTCCATGTCA
TAAGCCGGTACTCGACGTTGTCGTGACCGTGACCCAGACCCCTGTTGATAGCGTTGAGAAGGCCCTATATTTGAA
TTTCCAATCTCAGCTTTACGAAGATATGCCCATGGTGGAGGGTTAGTAAACCGATGATGATCGTGTGCAGCATGA
GATGAGACCGTGGCCAATCCTGTTCAAATGCCAAGACCCGCCTCCTACCACATGTAAGGCATCCGTCGGCCGCAC
GTTGAATTGTGCAAATGCCGAGATCATAAAAGCGGCCACACTTCCACGTCGGTACTGGATGGGTTGCGCGTGGCC
ATACTGTGTTTTCCATTGCGTGGGTCGTTCGTGTTACTGCGACGCAGATTCTGTAGGCAAGGCGCAGGGCTCTCT
TCTGAGGTAGAAAACACCCCATATTAATCTGAATTC

JF 4/26/17 Gel 1

1 2 3 4 5 6 7 8 9 10 11 12 13 14

KODAK DNA MULTIMAGE SYSTEM

Fig. 7

BB 4/26/99 Gel 2

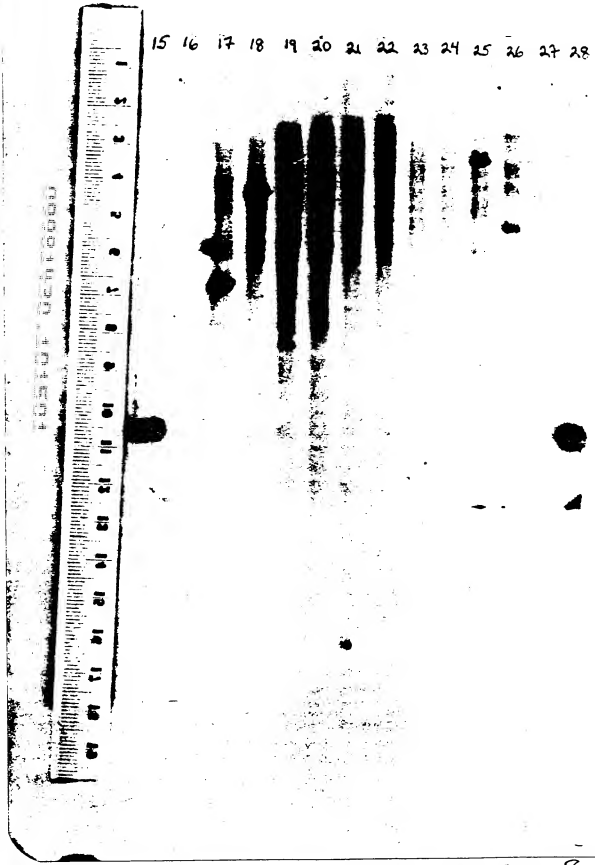


Fig. 8